## AMENDMENTS TO THE CLAIMS

The text of all pending claims, (including withdrawn claims) is set forth below. The following listing of claims replaces all prior versions and listings of claims in the application:

**Listing of Claims:**

1. – 8. (cancelled)

9. (new) A process for the synthetic generation of methane, comprising:

providing a feed gas mixture comprising carbon monoxide, hydrogen, water vapor, $CO_2$ and volatile hydrocarbons comprising $C_2$ and higher, the feed gas further comprising unsaturated $C_2$ components and aromatic hydrocarbons in the range of 1 to 10 vol%;

contacting the feed gas mixture with a fluidized bed catalyst having catalyst particles, the particles comprising a catalytic active component selected from the group consisting of a metal, a metal compound and combinations thereof;

wherein the contacting occurs at:

an elevated temperature in the range of 250 to 450°C;

a feed gas pressure in the range of 0.8 to 70 bar;

a gas hourly space velocity of 1000 to 50000 $h^{-1}$; and

a concentration of $H_2/CO$ in the initial gas mixture in the range of 0.25 to 5.

10. (new) The process according to claim 9, wherein the catalytic active component is selected from the group consisting of nickel, a nickel compound and combinations thereof, and the catalytic active compound is disposed on a ceramic carrier.

11. (new) The process according to claim 10, wherein the nickel compound is nickel oxide.

12. (new) The process according to claim 11, wherein the ceramic carrier is selected from the group consisting of $Al_2O_3$, $TiO_2$, $SiO_2$, $Y_2O_3$ and combinations thereof.

13. (new) The process according to claim 9, wherein the content of the catalytically active component is in the range of 20 to 100 weight%, as compared to the weight of the catalyst particles.

14. (new) The process according to claim 13, wherein the content of the catalytically active component is in the range of 40 to 60 weight%, as compared to the weight of the catalyst particles.

15. (new) The process according to claim 9, wherein the size of the catalyst particles is in the range of 100 to 5000 μm.

16. (new) The process according to claim 15, wherein the size of the catalyst particles is in the range of 200 to 1000 μm.

17. (new) The process according to claim 9, wherein the gas hourly space velocity is in the range of 2000 to 10000 $h^{-1}$, the temperature is in the range of 340 to 400°C and the gas pressure is in the range of 1 bar.

18. (new) The process according to claim 9, wherein a mean residence time of the feed gas mixture in the fluidized bed catalyst is in the range of 0.1 to 5 sec.

19. (new) The process according to claim 18, wherein a mean residence time of the feed gas mixture in the fluidized bed catalyst is in the range of 0.2 to 1 sec.

20. (new) The process according to claim 9, wherein the content of $H_2$/CO in the feed gas mixture is in the range of 0.8 to 2.

21. (new) The process according to claim 9, wherein the feed gas mixture is selected from the group consisting of: benzene, toluene and naphthalene.

22. (new) The process according to claim 9, wherein the feed gas is in the range of 1 to 5 vol%.

23. (new) A synthetic methane generation process, comprising:

providing a feed gas mixture comprising carbon monoxide, hydrogen, water vapor, $CO_2$ and volatile hydrocarbons, the feed gas further comprising unsaturated $C_2$ components and aromatic hydrocarbons in the range of 1 to 10 vol%;

providing a fluidized bed catalyst having catalyst particles comprising a catalytic active component selected from the group consisting of a metal, a metal compound and combinations thereof;

contacting the feed gas mixture with the fluidized bed catalyst at:

an elevated temperature in the range of 250 to 450°C;

a feed gas pressure in the range of 0.8 to 70 bar;

a gas hourly space velocity of 1000 to 50000 $h^{-1}$; and

a concentration of $H_2/CO$ in the initial gas mixture in the range of 0.25 to 5.

24. (new) The process according to claim 23, wherein the catalytic active component is selected from the group consisting of nickel, a nickel compound and combinations thereof, and the catalytic active compound is disposed on a ceramic carrier.

25. (new) The process according to claim 24, wherein the nickel compound is nickel oxide.

26. (new) The process according to claim 25, wherein the ceramic carrier is selected from the group consisting of $Al_2O_3$, $TiO_2$, $SiO_2$, $Y_2O_3$ and combinations thereof.

27. (new) The process according to claim 23, wherein the content of the catalytically active component is in the range of 20 to 100 weight%, as compared to the weight of the catalyst particles.

28. (new) The process according to claim 27, wherein the content of the catalytically active component is in the range of 40 to 60 weight%, as compared to the weight of the catalyst particles.